



## Flight Report

### Operation Ice Bridge Spring 2012

**UAF Alaska Flight No 7**  
**Mission Plan: St. Elias Range**

#### Flight Report Summary

<b>Aircraft</b>	<b>DHC-3 Otter</b>
<b>Flight Number</b>	DHC3-7
<b>Flight Request</b>	12M014
<b>Flight Hours</b>	3.6
<b>Take off time</b>	18:43 Z from Ultima Thule
<b>Landing time</b>	22:19 Z at Ultima Thule
<b>Date</b>	March 23, 2012
<b>Purpose of Flight</b>	LiDAR and radar surveys of glaciers within the St. Elias Range, Alaska.
<b>Aircraft Status</b>	Airworthy.
<b>Sensor Status</b>	operational.
<b>Significant Issues</b>	none.
<b>Accomplishments</b>	<ul style="list-style-type: none"><li>• Radar bed mapping of Tana, Bagley, Bering and Barnard Glaciers</li><li>• LiDAR centerline profiles and cross profiles of Tana, Bagley, Bering and Barnard Glaciers.</li></ul>

#### Science Data Report Summary

This mission performed LiDAR surveys and radar bed mapping of glaciers within the St. Elias Range, Alaska.

Geographic keywords: (St Elias Range, Alaska)

Repeat Mission: yes

Instrument	Instrument Operational		Data Volume	Instrument Issues
	Target area	Entire Flight		
<b>UAF LiDAR</b>	Yes	YES	1.2 GB	None
<b>GPS</b>	Yes	YES	50 MB	None
<b>IMU</b>	Yes	Yes	1 GB	None
<b>JPL Warm Ice Sounding Explorer (WISE) radar</b>	yes	Just over the glaciers	16 GB	None

### **Mission Log (Chris Larsen)**

Weather conditions were initially great, light winds with some high clouds. The morning was cold, with -25° F temperatures at the start. However, during the flight a weather system moved in and precluded us reaching all of our objectives. This flight began the same as yesterday's, up the Tana Glacier to the divide with the Bagley Ice Valley, then down the Bering Glacier, but the visibility dropped and prevented us from reaching Vitus Lake. We performed a series of five closely spaced radar cross sections (100 meter spacing) over the middle/lower Bering Glacier as an experiment to try tomography processing of these data. A series of cross sections up the Bering Glacier were then performed as the clouds and visibility chased us away from the coast side of the St. Elias Range. We then looked into attempting the Nebesna Glacier on the north side of the Wrangell Mountains, but that area was also experiencing deteriorating weather conditions. We flew one centerline profile of the Barnard Glacier, and then returned to our remote base of operations at Ultima Thule.

### **Individual instruments on board the aircraft:**

**LiDAR:** The UAF LiDAR system worked well.

**GPS:** System worked normally. No problems.

**Warm Ice Sounding Explorer (WISE) radar:** System worked great.

**IMU:** System worked well. No issues.

**DMS:** System worked well. No issues.

